

SIALOGRAPHY

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- Radiographic examination of the salivary glands and ducts

PURPOSE

- To opacify the salivary duct of interest and associated glandular tissue
- To demonstrate potential pathologic processes
- To demonstrate inflammatory lesions and tumors
- To determine the extent of salivary fistulae
- To localize diverticulae, strictures and calculi

CONTRAST MEDIA USED

- Water-soluble iodinated CM
- Omnipaque 300

INJECTION OF CM

- Manual pressure syringe
 - Attached to cannula or catheter
- Hydrostatic pressure
 - Used of syringe barrel with plunger removed
 - Attached to drip stand
 - **Distance:** 28 cm above level of patient's mouth

SECRETORY STIMULANTS

- Fresh lemons slice/juice
- 2-3 minutes before and after completion of the examination
- **Purpose:** before exam
 - To open the duct
 - To localized the orifice of selected duct

- For easier passage of a cannula or catheter

- **Purpose:** after exam

- To stimulate rapid evacuation of the CM
- Take radiograph 10 minutes after the procedure
 - To verify the clearance of CM

PATHOLOGIC INDICATIONS

CALCULUS/STONE

- Abnormal concretion of mineral salts

FISTULA

- Abnormal connection between two internal organs

FOREIGN BODY

- Foreign material in the airway

SALIVARY DUCT OBSTRUCTION

- Condition preventing the passage of saliva through the duct

STENOSIS

- Narrowing or contraction of a passage

TUMOR

- New tissue growth

SIALECTASIA

- Dilation of a duct

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CONTRAINDICATIONS

- 1.) Severe inflammation of salivary glands
- 2.) Severe infection of salivary glands
- 3.) History of allergy to CM

PATIENT PREPARATION

- 1.) Removed dentures
- 2.) Removed radiopaque items

MAJOR EQUIPMENT

- Fluoroscopy
- CT

ACCESSORY EQUIPMENT

- 3 mL syringe
- Cotton swabs
- Sterile gauze
- Extension tubing
- Adhesive tape
- Cannula
 - blunt-tipped or modified butterfly
- disposable sterile gloves
- topical anesthetic
- Preferred CM
- Lemon slice/juice
- Head lamp
 - For better illumination of the orifice

ANATOMY

MOUTH

- Oral/buccal cavity
- First division of digestive system
- Forms by cheeks, hard and soft palates, and tongue
- Receives saliva

CAVITIES OF THE MOUTH

1.) Oral Vestibule

- Space between teeth and cheeks

2.) Oral Cavity/Mouth Proper

- Space within dental arches

ROOF OF THE ORAL CAVITY

1.) Hard Palate

- Anterior portion
- Forms by horizontal plates of maxillae and palatine bones

2.) Soft palate

- Posterior portion
- Highly sensitive to touch
- **Function:**
 - Partial septum between mouth and pharynx
- **Uvula:** pendulous process
- **Anterior arches:** project forward to the sides of the base of tongue
- **Posterior arches:** projects posteriorly to blend the posterolateral walls of the pharynx
- **Palatine tonsil:** triangular space occupied by anterior and posterior arches

FLOOR OF THE ORAL CAVITY

1.) Tongue

- Forms the floor of the mouth
- Freely movable
- **Base:** directed posteriorly
- **Apex:** directed anteriorly
- **Sublingual space:** free space under the tongue

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- **Frenulum of the tongue:** restricts the movement the tongue
- **Sublingual fold:** crest-like ridge

TEETH

- **Function:** for mastication
- **Mastication:** the process of chewing and grinding food into small pieces
- **Saliva:**
 - Softens the food
 - Keeps the mouth moist
 - Contributes digestive enzymes

SALIVARY GLANDS

- Secretes saliva
- 1L of saliva/day

3 MAJOR SALIVARY GLANDS

1.) Parotid Gland

- Largest
- Wedge-shaped gland
- **Location:** anterior and inferior to the ear
- **Portion:**
 - Superior portion
 - Deep/Retromandibular portion
- **Duct:** Parotid duct/Stensen's duct

2.) Submandibular/Submaxillary Gland

- Second largest
- Irregular shaped gland

- **Location:** inferior and medial to the body of mandible
- **Duct:** Submandibular/Submaxillary duct/Wharton's duct
- **Mylohyoid muscle:** muscle of the tongue and floor of the mouth

3.) Sublingual Glands

- Smallest
- Elongated gland
- **Location:** floor of the mouth beneath sublingual fold
- **Duct:** Sublingual Duct/Bartholin's Duct
- **Unique Structure:** duct of Rivinus
 - 12 small ducts
 - Helps transport saliva to oral cavity

4 MINOR SALIVARY GLANDS

1.) Labial Glands – lips

2.) Buccal Glands – cheeks

3.) Palatal Glands – palate

4.) Lingual Glands – tongue

SIALOGRAPHY

POSITIONING ROUTINES

PP: Patient/Part Position

RP: Reference Point

CR: Central Ray

SS: Structures Shown

TANGENTIAL PROJECTION

PP: Recumbent/seated

- **Supine:** head rotated toward the side being examined (to place parotid area \perp to IR); head rested on occiput; flex the head (to place mandibular ramus // to long axis of IR)
- **Prone:** head rotated; head rested on chin; flex the head
- Head rested on forehead or nose
 - If parotid gland is not demonstrated on previous position
- **Igluer Maneuver:**
 - Sam Igluer
 - Fill the mouth with air
 - Puff the cheeks out as much as possible
 - **Purpose:** to increase the visibility of salivary calculi

RP: Lateral surface of mandibular ramus

CR: \perp

SS: Parotid gland and duct

LATERAL PROJECTION

PP: Semiprone/seated/upright; affected side against IR

- **Parotid gland:** neck extended (to clear the space between cervical area and mandibular ramus); IR center 1 in. superior to gonion; MSP 15° toward IR

- **Submandibular gland:** head in true lateral; IR center to inferior margin of gonion

○ **Igluer Maneuver:**

- Depressing the floor of the mouth
- **Purpose:** to displace the submandibular gland inferior to mandible

○ **Alternative Maneuver:**

- Place patient's index finger on the back of the tongue of affected side

RP: 1 in. superior to gonion (parotid gland); inferior margin of gonion (submandibular gland)

CR: \perp

SS: Parotid and submandibular glands

- Bony structures
- Calcific deposit or swelling

Oblique Projection:

- Axiolateral projections of the mandible
- To obtain image of the deeper portions of the parotid and submandibular glands

-THE END-

"Board Exam is a matter of preparation. If you FAIL to prepare, you PREPARE to fail"

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